

From Cost to Value: The Business Case for Disaster Recovery as a Service

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Effective disaster recovery is a cornerstone of modern business resilience. This Azure SQL Server Disaster Recovery Plan outlines essential strategies and protocols to safeguard your operations against disruptions, ensuring continuity, data integrity, and adaptability in the face of challenges.

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Chapter 1:
Introduction

Organizations depend on data to make strategic decisions and stay ahead of the competition. Data loss prevention is, therefore, paramount to business success.

While traditional disaster recovery (DR) methods have worked well enough in the past, they come with significant limitations. Backing up and restoring data from physical media is time-consuming and can prolong downtime. Traditional DR solutions are also expensive and require significant upfront investment in hardware and software along with ongoing maintenance costs.

In recent years, Disaster Recovery as a Service (DRaaS) has emerged as an alternative and more cost-effective solution. DRaaS offers a cloud-based, scalable and affordable approach to protecting digital assets and can be a key part of your business continuity planning.

Organizations can use DRaaS to safeguard their data and guarantee operational continuity in the face of any adversity. With greater reliability and scalability and lower upfront costs than traditional DR solutions, DRaaS provides the flexibility your business needs for its data loss prevention plan

Chapter 2:
The State of Backup and Disaster Recovery

Data backup solutions used to be straightforward. Depending on internal capacity, organizations would copy data to physical media such as tapes, external hard drives or the cloud at varying intervals. Disaster recovery was often reserved for catastrophic events, and its importance was underestimated until businesses faced real problems.

IT environments have since grown more complex and the data they rely on is more abundant. Worldwide, the volume of data being created, stored and consumed is growing exponentially—from two zettabytes in 2010 to an estimated 180 zettabytes in 2025 (Statista). With this huge increase comes a greater risk of sophisticated cyberthreats and unpredictable natural disasters. This creates a need for more reliable backup and DR solutions to futureproof your data.

Chapter 3: How DR Has Grown in Importance and Complexity

Digital transformation efforts and an increased reliance on cloud solutions have changed business attitudes towards DR. Previously, DR was seen as a niche concern relevant only to large enterprises, something implemented only after a catastrophic event. Today, DR is a central pillar of any IT strategy.



This shift is driven by several factors:

- The growing frequency and sophistication of cyberattacks, particularly ransomware, have highlighted the vulnerabilities of traditional backup solutions.
- The rise of cloud computing and hybrid IT environments has made data management and protection more complex.
- Regulatory requirements and the need for business continuity have pressured organizations to implement more comprehensive DR plans.

Today, modern DR solutions must address many different scenarios, from data breaches and system failures to natural disasters and human errors. As a result, the DR market has seen remarkable growth and transformation.

Advancements in technology have democratized access to sophisticated DR solutions, making them more affordable and scalable for businesses of all sizes. This includes the introduction of DRaaS which has changed the playing field. The cloud-based, pay-as-yougo DRaaS model eliminates the need for extensive on-premises infrastructure and allows organizations to quickly recover critical systems and data with minimal downtime.

Chapter 4: Why Traditional Disaster Recovery is No Longer Enough

Backing up data onto tapes or disks and storing them off-site can no longer meet the needs of modern organizations that rely on complex systems and huge amounts of data to operate.

Here are some of the limitations businesses may come across when using on-premises DR:

- On-premises DR is time-consuming—recovery time can take days —and can cause data loss if not performed carefully.
- It requires significant upfront investment in hardware and software along with ongoing maintenance fees.
- The growing complexity of IT environments requires ongoing access to in-house expertise.
- DR plans require frequent tests and updates which can be disruptive and costly.
- Traditional DR solutions are hard to scale to accommodate growing data volumes and new applications, leaving your business vulnerable to threats.

Common mistakes in disaster recovery planning

Disaster recovery planning is vital to keeping your business running after unexpected disruptions. However, poor planning and implementation can undermine the effectiveness of your DR plan. Some common mistakes include:

Infrequent DR tests and updates. A recent study by Security Magazine, for instance, has found that only 50% of organizations perform annual (or less frequent) DR tests.

Overlooking potential threats, including cyberattacks, natural disasters and human errors.

Failure to align your DR plans with your business continuity goals and to prioritize critical workloads. One study found that only 54% of companies surveyed even have a DR plan.

Underestimating recovery time and not having contingency plans for potential recovery issues

Risks of a poor disaster recovery solution

A poor disaster recovery solution can have severe consequences for your business. Prolonged downtime can cause financial losses, damage your company's reputation and compromise your customers' trust. According to ITIC, the average hourly cost of downtime now exceeds $300,000 for most SMBs and large enterprises. Data loss not only disrupts operations but can lead to legal and regulatory issues. You can also lose valuable intellectual property.

Additionally, not having a reliable DR solution leaves you more vulnerable to cyberattacks. Ransomware attackers, for example, can encrypt critical data and demand a ransom for its release. Without a robust DR plan, you may have no choice but to pay the ransom or face extended downtime.

These risks highlight how important it is that you prioritize DR in your overall IT strategy. Swift disaster recovery is not just a technical necessity but a business imperative.

Chapter 5:
Introduction and Evolution of DRaaS

While data backups to physical tape drives and cartridges have been widely used since the 1980s, the rise of cloud computing in the 2000s saw DR shift to the cloud. Since the 2010s , the concept of DRaaS has become widespread as cloud technology matured and businesses recognized the potential of these solutions for disaster recovery. DRaaS lets you use a third-party provider and their hardware to back up your data and IT infrastructure as a scalable, flexible and cost-effective alternative to traditional DR methods.

As the technology evolved, DRaaS providers began to offer more sophisticated services, including continuous data protection, automated failover and comprehensive recovery options.

DRaaS adoption has steadily increased in recent years, with the DRaaS market expected to grow from $10.7 billion in 2023 to $26.5 billion by 2028 (MarketsandMarkets), at a compound annual growth rate (CAGR) of 19.8%. Interestingly, not all large enterprises are sold on moving from traditional DR methods to cloud-based solutions due to concerns regarding data security, control and unauthorized access. To win their trust, DRaaS providers must demonstrate their advanced security measures and ease of use.

On the other hand, small and medium-sized businesses (SMBs) have been keen adopters of DRaaS. DRaaS allows them to access enterprise-grade disaster recovery capabilities without the same upfront investment as onpremises DR. DRaaS also lets SMBs scale resources to meet evolving needs while maintaining efficient recovery processes.



Chapter 6:
The ROI of DRaaS

There is no one-size-fits-all answer for disaster recovery. However, conducting a thorough cost-benefit analysis of the financial and operational implications of traditional disaster recovery methods versus DRaaS solutions shows that DRaaS comes with several advantages.

No need for upfront investment
A significant advantage of DRaaS is the reduction in upfront capital expenditure. Traditional disaster recovery solutions require substantial investment in on-premises hardware, software licenses and infrastructure. You must purchase and maintain servers, storage devices and networking equipment. In contrast, DRaaS operates on a subscription-based model, so you pay only for the services you need.

Additionally, with DRaaS, you don’t have to refresh your hardware. Traditional DR solutions require periodic, expensive hardware upgrades to keep pace with technological advancements and growing data volumes. DRaaS uses your provider’s infrastructure, which is continuously updated and maintained.

No maintenance costs
DRaaS offers significant savings in maintenance costs. Traditional DR solutions require ongoing expenses for power, cooling and network infrastructure to support the disaster recovery environment. These costs can add up quickly, especially when you have large data volumes and a complex IT environment.

DRaaS, however, lets you shift these costs to the service provider and reduce your operational expenses. DRaaS providers include planned testing and maintenance as part of their service offerings. This reduces the burden on your IT team and ensures that the disaster recovery solution is always ready to be deployed. Scheduled testing and maintenance also ensure that the DR solution will work effectively in a real-world scenario while reducing the risk of downtime and data loss.

Access to best-in-class expertise at no additional cost
Managing a traditional DR solution requires specialized skills and knowledge. If you’re going to maintain your own DR environment, you must invest in recruiting and training IT staff familiar with DR technologies.

DRaaS providers, on the other hand, already have teams of experts who specialize in disaster recovery. You can access this expertise without hiring your own staff, reducing costs and making sure that your DR solution is managed by experienced professionals who are up to date with the latest best practices and technologies.

Minimized risk of catastrophic downtime
One of the most significant benefits of DRaaS is reducing catastrophic downtime and productivity losses. Downtime can have severe financial implications for your business, including lost revenue, decreased productivity and reputation damage.

DRaaS solutions minimize downtime by providing fast and reliable recovery options. Automated failover capabilities allow you to quickly switch to your backup and minimize disruption, while routine testing and maintenance help guarantee that your DRaaS solution is always ready to be deployed. This increases the likelihood that your DR plan will work effectively in a real-life scenario.

Additionally, DRaaS solutions can replicate your entire IT environment in the cloud and provide geographic diversity, an advantage during a natural occurrence like a hurricane, earthquake or flood.

Improved data loss prevention
Data loss is a major concern for any business. While traditional DR solutions can expose you to unforeseen vulnerabilities depending on how your DR strategy has been implemented, DRaaS solutions offer higher DR success rates and reduce the potential for data loss. With advanced technologies such as continuous data protection, real-time replication and data redundancy, your data is always accessible, up to date and ready to be recovered, even after disruptive occurrences like cyber attacks.

Chapter 7: What to Consider When Looking at DRaaS Solutions

Selecting the right DRaaS provider can make a big difference in your company's ability to recover swiftly and minimize downtime during a crisis. However, the sheer volume of options available in the market can make this choice daunting.

When evaluating different aspects of DRaaS solutions, check that they align with your organization's unique needs and continuity goals. Here are some factors to consider:

Your RTO and RPO needs

Take a look at your provider's recovery time objectives (RTO) and recovery point objectives (RPO). RTO refers to the maximum acceptable amount of time it takes to restore operations after a disaster while RPO refers to the maximum acceptable amount of data loss measured in time. Different DRaaS providers offer different RTOs and RPOs, so choose a solution that aligns with your business's continuity goals.

You should also consider these factors:

Look for DRaaS providers that offer customizable and flexible RTO and RPO settings which allow you to define different recovery objectives for different workloads.

Evaluate the provider's performance in meeting their stated RTOs and RPOs and ask for documented evidence, such as historical performance data or case studies to demonstrate the provider's ability to achieve their promised metrics.

Look for advanced technologies such as continuous data protection (CDP), real-time replication and automated failover to reduce RTO and RPO.

Review the Service Level Agreements (SLAs) provided by the DRaaS vendor to make sure they clearly define the RTO and RPO targets and penalties or remedies in case of non-compliance.

Look for providers that offer systematic, automated testing and validation who can meet RTO and RPO targets.

Verify that your DRaaS vendor has a knowledgeable support team available 24/7 to assist you with disaster recovery efforts.

Balance the higher cost of achieving shorter RTOs and RPOs with the criticality of your protected applications and data to determine the most cost-effective solution for your business

Types of Workloads

Different applications and data have different recovery requirements so you need more than a one-size-fits-all approach. Tailoring your DRaaS solution to your specific workloads helps your business recover efficiently, optimize your costs and maintain continuity following a disaster.

Here are the steps to catagorize and tier your workloads:

1) Identify and inventory your workloads
Conduct a comprehensive inventory of all applications, databases and data sets. Map each workload to specific business functions and document their purpose, dependencies and ownership.

2) Assess the business impact
Determine the criticality of each workload and evaluate the financial, operational and reputational impact of downtime for each workload.

3) Define your recovery objectives
Establish RTOs and RPOs for each workload, align these recovery targets with the overall business continuity goals and validate them with stakeholders.

4) Categorize your workloads into tiers

- Tier 1 (mission-critical): High impact, requires near-instantaneous recovery, minimal data loss (such as financial transaction systems, e-commerce platforms, CRMs and ERPs).

- Tier 2 (business-critical): Important for operations, tolerates slightly longer recovery, moderate data loss (such as email, instant messaging, project management tools and data analytics platforms).

- Tier 3 (non-critical): Low impact, can withstand extended downtime, higher data loss tolerance (such as development and testing environments, archival data and non-essential applications).

5) Document and implement your plan
Categorize each workload with assigned tiers, RTOs and RPOs and configure your DRaaS solution to meet the recovery objectives.

6) Define your recovery objectives
Check your workload categorizations and update them to reflect any changes in business priorities and technology. Perform scheduled disaster recovery tests (at least once per year) to validate that the DRaaS solution meets the defined recovery targets

Chapter 7: What to Consider When Looking at DRaaS Solutions

Consider these key factors when evaluating DRaaS solutions per workload type:

Workload Type	Description	Example	DR solution
Mission-critical	High-impact workloads are essential for the business. Downtime can cause financial loss, reputational damage and operational disruption.	Financial transaction systems, e-commerce platforms, customer relationship management (CRM) systems and enterprise resource planning (ERP) systems	DRaaS provider that offers reliable replication and failover capabilities to ensure minimal interruption and near-instantaneous recovery.
Business-critical	These workloads are important for business operations but can tolerate slightly longer recovery times	nternal communications systems like email and instant messaging, project management tools and data analytics platforms.	Flexible RTO and RPO options that can be customized per workload and can allocate resources efficiently during a disaster to prioritize business-critical applications
Non-critical	Non-essential workloads that can tolerate longer recovery times, making them suitable for lower priority recovery efforts	Development and testing environments, archival data and non-essential applications.	DRaaS solution with sufficient recovery capabilities and efficient storage methods to manage large volumes of non-critical data
Mixed	A mix of mission-critical, businesscritical and non-critical workloads	High-priority transactional systems and lower-priority development environments within the same organization	DRaaS solution that can handle different RTO and RPO targets per application and data set, offers customizable recovery strategies per workload and can easily scale to meet business growth

An upfront assessment of your workloads and their specific recovery requirements can help you choose a DRaaS solution with the appropriate level of protection to minimize downtime, safeguard critical operations and ensure business continuity.

Ancillary Elements

In addition to RTO, RPO and workload considerations, you should also consider the ancillary services offered by the DRaaS provider to ensure they're the right fit. Here are some key ancillary elements to consider:

- Customer support, including availability, responsiveness and quality of support.
- Service level agreements (SLAs) that define performance metrics like RTO and RPO targets, uptime guarantees and penalties for noncompliance.
- Compliance and regulatory requirements, including meeting industry standards for compliance certifications, audits and regulatory requirements like data residency and legal and regulatory alignment.
- Security features such as data encryption, access controls, monitoring and alerts.
- Scheduled and automated testing and validation.
- Integration and compatibility with existing infrastructure, APIs and connectors and hybrid and multi-cloud support.
- Customizable recovery plans and managed services, like day-to-day management, health checks and performance optimization.

Effective disaster recovery planning lets you allocate resources efficiently and prioritize the recovery of critical applications and data. Tiering your workloads helps you establish that your DRaaS solution is aligned with your continuity goals and that you've optimized your resource allocation

Chapter 11: US Signal ReliaCloud: A Flexible DRaaS Solution

US Signal IT Solutions offers flexible and comprehensive DRaaS solutions designed to meet the diverse needs of your business. US Signal's ReliaCloud is customizable and designed to fit with whichever DR method you decide to go with and comes with a range of disaster recovery services, from basic backup and restore to advanced automated failover and continuous data protection.

ReliaCloud is built on cloud infrastructure for high availability and reliability and offers these additional benefits:

- Customer support, including availability, responsiveness and quality of support.
- Service level agreements (SLAs) that define performance metrics like RTO and RPO targets, uptime guarantees and penalties for noncompliance.
- Compliance and regulatory requirements, including meeting industry standards for compliance certifications, audits and regulatory requirements like data residency and legal and regulatory alignment.
- Security features such as data encryption, access controls, monitoring and alerts.
- Scheduled and automated testing and validation.
- Integration and compatibility with existing infrastructure, APIs and connectors and hybrid and multi-cloud support.
- Customizable recovery plans and managed services, like day-to-day management, health checks and performance optimization.

Do you prefer to have someone else handle the management of your disaster recovery environment? ReliaCloud offers managed services, including scheduled testing, maintenance and updates to guarantee that your DR solution is always deployment-ready. Managed services also give access to US Signal's team of experts who can handle the day-to-day management of your DR environment.

us signal

Digital Infrastructure Solutions Built for Your Business



US Signal, established in 2001, is a premier national digital infrastructure company that operates a fully owned fiber network to deliver a wide range of advanced digital solutions. Our offerings include robust cloud services, secure colocation facilities, high-performance connectivity, comprehensive hardware resale, and managed IT services, empowering businesses to enhance their operational efficiency through tailored network, data center, data protection, and cybersecurity solutions.